What is claimed is:

1. A method for improving the performance of a rotary actuator in a disk drive, the rotary actuator comprises a voice coil motor (VCM) characterized by a torque parameter, the disk drive comprises a servo control system having a motor driver circuit for receiving a series of command effort signals transmitted based on a first seek profile, and for providing an operating current to the VCM based on the command effort signals for causing a movement of the actuator from a first radial location to a target radial location, the method comprising:

recording the series of transmitted command effort signals, and while the actuator is moving:

adjusting each recorded command effort signal to account for at least one disk drive influence on the actuator movement;

storing the adjusted command effort signals;

monitoring the velocity of the moving actuator;

calculating an acceleration value corresponding to the moving actuator from the stored command effort signals and the monitored velocity; and

adjusting the acceleration value to account for a radial torque parameter variation.

2. The method as defined in claim 1, wherein the recording further comprises:

comparing each command effort signal to a threshold value; and

determining if the compared command effort signal exceeds the threshold value.

3. The method as defined in claim 2, wherein the storing further comprises:

storing the last command effort signal transmitted prior to the command effort signal exceeding the threshold value; and

storing a subset of the command effort signals transmitted following the command effort signal exceeding the threshold value wherein each command effort in the subset exceeds the threshold value.

4. The method as defined in claim 3, wherein the monitoring further comprises:

determining an initial velocity of the moving actuator corresponding to the first-transmitted command effort signal in the subset of the command effort signals following the exceeding of the threshold value; and

determining a final velocity of the moving actuator corresponding to the most recently transmitted command effort signal in the subset of the command effort signals.

5. The method as defined in claim 4, wherein the calculating further comprises:

calculating a velocity differential between the determined initial velocity and the final velocity;

performing a summation of the stored subset of command effort signals and generating a summation result;

subtracting a first value corresponding to a selected command effort signal in subset of the command effort signals from a second value corresponding to the last command effort signal transmitted prior to the command effort signal exceeding the threshold value, and generating a subtraction result;

multiplying the subtraction result by a VCM-delay value and generating a multiplication result;

adding the multiplication result to the summation result and generating an addition result; and

dividing the velocity differential by the addition result and generating a first division result wherein the calculated acceleration value comprises the first division result.

6. The method as defined in claim 5, wherein the VCM-delay value is a normalized VCM-delay value of 0.5.

7. The method as defined in claim 5, further comprising:

modifying the first seek profile based on the adjusted acceleration value.

8. The method as defined in claim 7, wherein the movement of the actuator comprises an acceleration phase followed by a deceleration phase.

9. The method as defined in claim 8, wherein the calculating occurs during the acceleration phase.

10. The method as defined in claim 9, wherein modifying the first seek profile comprises:

adjusting the configuration of deceleration phase to reduce a time period associated with the movement of the actuator from the first radial location to the target radial location.

11. The method as defined in claim 10, wherein the threshold value corresponds to an approximate saturation current of the motor driver circuit.

12. The method as defined in claim 11, wherein the subset of command effort signals comprises a predetermined number of command effort signals.

13. The method as defined in claim 12, wherein the predetermined number of command effort signals is six.

14. The method as defined in claim 5, wherein the servo control system comprises a compensator for determining command effort signals during track-follow operations.

15. The method as defined in claim 14, further comprising:

applying a gain factor to the determined command effort signals based on the adjusted acceleration value.

16. The method as defined in claim 15, further comprising:

scaling the gain factor by a ratio of the calculated acceleration value and an initial acceleration value wherein the initial acceleration value is determined prior to the recording.

17. The method as defined in claim 16, wherein the threshold value corresponds to a current less than a saturation current of the motor driver circuit.

18. The method as defined in claim 17, wherein the subset of command effort signals comprises a predetermined number of command effort signals.

19. The method as defined in claim 18, wherein the predetermined number of command effort signals is three.

20. The method as defined in claim 1, wherein the adjusting the acceleration value further comprises:

obtaining a value corresponding to the radial torque parameter variation; and

adjusting the calculated acceleration value based on the obtained value.

21. The method as defined in claim 20, wherein the value corresponding to the radial torque parameter variation is obtained from a look up table.

22. The method as defined in claim 1, wherein the motor driver circuit comprises a digital to analog converter (DAC).

23. The method as defined in claim 1, wherein the first seek profile is determined based on an initial acceleration value determined prior to the recording.

24. The method as defined in claim 1, further comprising:

reducing the effects of noise-induced deviations in the adjusted acceleration value.

25. The method as defined in claim 24, wherein the reducing further comprises:

applying a slew rate limit to the adjusted acceleration profile.

26. The method as defined in claim 25, wherein the reducing further comprises:

applying a low-pass filter to the adjusted acceleration profile.

27. The method as defined in claim 1, wherein the disk drive influence is caused by a flex bias of a cable connecting the rotary actuator to the servo system and wherein the adjusting each command effort signal further comprises filtering a flex bias feed forward component from the command effort signal.

28. The method as defined in claim 1, wherein the disk drive comprises a disk having a plurality of recorded servo tracks and wherein the disk drive influence is caused by a variation in the position of a recorded servo track and wherein the adjusting each command effort signal further comprises filtering from the command effort signal a component corresponding to the variation in the position of the recorded servo track.